

In the Claims

Please cancel claims 1 and 3 - 53 and substitute the following new claims 54 - 97 therefor.

The pending claims are claims 2, and 54 - 97.

PENDING CLAIMS

2. (Original) In a process for preparing reduced-odor esters comprising reacting an acid with an alcohol in the presence of an effective amount of a catalyst, and removing water of esterification until esterification is substantially complete, the improvement which comprises removing said catalyst after the esterification reaction is substantially complete.

54. (new) A reduced odor benzoic acid ester prepared by the process of reacting benzoic acid with an alcohol in the presence of an effective amount of a catalyst, which comprises the steps of:

heating said reaction mixture;

collecting distillate comprising the water of reaction;

removing said catalyst from said reaction mixture after the reaction is complete, and before neutralization;

neutralizing and washing the acidity of said reaction mixture with at least one alkali;

drying said ester; and

filtering the refined ester product.

55. (new) An ester prepared by the process of claim 54 wherein said catalyst comprises an organometallic compound or metal oxide compound.

56. (new) An ester prepared by the process of claim 54 wherein said catalyst is stannous oxalate or zinc oxide.

57. (new) An ester prepared by the process of claim 54 wherein said catalyst is removed by filtration.

58. (new) An ester prepared by the process of claim 54 wherein in said neutralization step, the filtered, crude ester is neutral washed with amounts of alkali at least stoichiometric to the acidity of the crude ester.

59. (new) An ester prepared by the process of claim 54 wherein said alkali comprises an alkali metal carbonate or alkali metal hydroxide.

60. (new) An ester prepared by the process of claim 54 wherein after said neutralization is completed, contacting the wet, crude ester with a bleaching agent.

61. (new) An ester prepared by the process of claim 54 wherein said bleaching agent is hydrogen peroxide.

62. (new) An ester prepared by the process of claim 54 wherein said wet, crude ester is contacted with a bleaching agent in a first or subsequent washing step, after neutralization is complete.

63. (new) An ester prepared by the process of claim 54 wherein said alcohol comprises from 3 to 22 carbon atoms.

64. (new) An ester prepared by the process of claim 54 wherein said alcohol comprises 12 to 15 carbon atoms.

65. (new) An ester prepared by the process of claim 54 wherein said crude ester has an acidity of no more than 10 mg KOH/g.

66. (new) An ester prepared by the process of claim 54 further comprising pretreating said alcohol with sodium borohydride before reacting with benzoic acid and before contacting with said catalyst.

67. (new) An ester prepared by the process of claim 54 wherein said neutralization wash further comprises at least one salt selected from the group consisting of sodium chloride, sodium sulfate, potassium chloride and potassium sulfate.

68. (new) An ester prepared by the process of claim 54 further comprising the step of cooling said reaction mixture after said reaction is substantially complete and before said neutralization step.

69. (new) An ester prepared by the process of claim 54 comprising the step of further washing the resulting crude ester after said neutralization and washing step.

70. (new) An ester prepared by the process of claim 69 wherein at least one salt selected from the group consisting of sodium chloride, sodium sulfate, potassium chloride, and potassium sulfate is added in at least one of said washing steps.

71. (new) An ester prepared by the process of claim 54 wherein distillate is collected until esterification is substantially complete.

72. (new) An ester prepared by the process of claim 54 wherein said process is a batch process.

73. (new) An ester prepared by the process of claim 54 wherein said process is a continuous process.

74. (new) A reduced odor C12 - C15 alkyl benzoate ester prepared by the process of claim 54.

75. (new) A non-aqueous composition for topical application comprising one or more active ingredients and a benzoic acid ester emollient agent prepared by the process of claim 54.

76. (new) The composition of claim 75 wherein said one or more active ingredients are selected from the group consisting of sunscreens, moisturizers, film formers, detergents, emulsifiers, emollients, thickening agents, antiseptic agents, conditioning agents, deodorant actives, and reducing agents.

77. (new) An aqueous composition comprising one or more active ingredients and a benzoic acid ester emollient agent prepared by the process of claim 54.

78. (new) The composition of claim 77 wherein said one or more active ingredients are selected from the group consisting of sunscreens, moisturizers, film formers, detergents, emulsifiers, emollients, thickening agents, antiseptic agents, conditioning agents, deodorant actives, and reducing agents.

79. (new) A reduced odor octanoate ester prepared by the process of reacting ethylhexanoic acid with an alcohol in the presence of an effective amount of a catalyst, which comprises the steps of:

heating said reaction mixture;

collecting distillate comprising the water of reaction;

removing said catalyst from said reaction mixture after the reaction is complete, and before neutralization;

neutralizing and washing the acidity of said reaction mixture with at least one alkali;

drying said ester; and

filtering the refined ester product.

80. (new) An ester prepared by the process of claim 79 wherein said alcohol comprises from 3 to 22 carbon atoms.

81. (new) An ester prepared by the process of claim 79 wherein said alcohol comprises 12 to 15 carbon atoms.

82. (new) An ester prepared by the process of claim 79 wherein said catalyst is stannous oxalate or zinc oxide.

83. (new) An ester prepared by the process of claim 79 wherein after said neutralization is completed, contacting the wet, crude ester with a bleaching agent.

84. (new) A reduced odor aliphatic, emollient ester prepared by the process of reacting a carboxylic acid with an alcohol in the presence of an effective amount of a catalyst, which comprises the steps of:

heating said reaction mixture;
collecting distillate comprising the water of reaction;
removing said catalyst from said reaction mixture after the reaction is complete, and before neutralization;
neutralizing and washing the acidity of said reaction mixture with at least one alkali;
drying said ester; and
filtering the refined ester product.

85. (new) An ester prepared by the process of claim 84 wherein said alcohol comprises from 3 to 22 carbon atoms and wherein said carboxylic acid comprises linear or branched carboxylic acids with 4 to 22 carbon atoms.

86. (new) An ester prepared by the process of claim 84 wherein said alcohol comprises 12 to 15 carbon atoms.

87. (new) An ester prepared by the process of claim 84 wherein said catalyst is stannous oxalate or zinc oxide.

88. (new) An ester prepared by the process of claim 84 wherein after said neutralization is completed, contacting the wet, crude ester with a bleaching agent.

89. (new) A reduced odor glycol dibenzoate ester prepared by the process of reacting a glycol with benzoic acid in the presence of an effective amount of a catalyst, which comprises the steps of:

heating said reaction mixture;

collecting distillate comprising the water of reaction;

removing said catalyst from said reaction mixture after the reaction is complete, and before neutralization;

neutralizing and washing the acidity of said reaction mixture with at least one alkali;

drying said ester; and

filtering the refined ester product.

90. (new) An ester prepared by the process of claim 89 wherein said glycol comprises from 3 to 12 carbon atoms.

91. (new) An ester prepared by the process of claim 89 wherein said glycol comprises 6 to 12 carbon atoms.

92. (new) An ester prepared by the process of claim 89 wherein said glycol is dipropylene glycol.

93. (new) An ester prepared by the process of claim 89 wherein said catalyst is stannous oxalate or zinc oxide.

94. (new) An ester prepared by the process of claim 89 wherein after said neutralization is completed, contacting the wet, crude ester with a bleaching agent.

95. (new) An ester prepared by the process of claim 54 wherein said alcohol is
Neodol 25.

96. (new) An ester prepared by the process of claim 79 wherein said alcohol is
Neodol 25.

97. (new) An ester prepared by the process of claim 84 wherein said alcohol is
Neodol 25.